Statement of David R. Siddall
before the
Federal Communications Commission
Public Hearing on
Overcoming Obstacles to Telephone Service for Indians on Reservations
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Mr. Chairman and Commissioners:

It is a privilege to appear before you this morning.[1] It is commendable that you have ventured beyond D.C.'s infamous Beltway to bring government closer to its citizens through these hearings, and to witness first-hand the state of communications on Indian reservations.

The Commission has done much to ensure the availability of communications services, but as other witnesses state here today, important work remains. I want to thank you for this opportunity to put my "public policy" cap back on for a very worthy endeavor. I appear today not on behalf of any client, but to provide an independent assessment of technological options that might help to address the problem of unserved and under-served areas.

1/ David Siddall practices communications law at Verner, Liipfert, Bernhard, McPherson & Hand, Chartered, Washington, D.C. Mr. Siddall served at the FCC in a variety of posts, including Chief of its Spectrum Allocation Branch (1991-1994) and as an advisor to Commissioner Susan Ness (1994-1998).

Prominently inscribed above the main entrance of the U.S. Supreme Court is the phrase "Equal Justice Under Law". If you have the opportunity to place an inscription above the main entrance to the new FCC headquarters at the Portals, there would be no more worthy a phrase than "Communications Available to All". Congress established the Commission to ensure the availability of communications services to all consumers. In the words of Section 1of the Communications Act of 1934, the FCC was created:

> For the purpose of regulating . . . communication by wire and radio so as to make available, so far as possible, to all the people of the United States, without discrimination . . . a rapid, efficient, Nation-wide, and world-wide wire and radio communication service with adequate facilities at reasonable charges . . . .

In adopting the Telecommunications Act of 1996 Congress built upon the goal of fostering provision of services to the American public, this time through fostering competition. The Commission's hearings that address service on Indian reservations further these goals and efforts.

You are hearing from many witnesses this morning. As at the first hearing in Albuquerque, the problem of unserved areas has been well described. So I will focus not on the problem, but rather on the issues and actions the Commission might consider in formulating incentives and solutions. I will focus particularly on technology, and address related regulatory aspects: technological options that might be used to bring affordable telecommunications service to the unserved; implications of rapidly changing technology in a dynamic marketplace; and ideas the Commission might consider to foster use of these

technologies to promote the availability of communications services in unserved or under-served areas.

Technological Options

The pace of technological development and innovation is accelerating, and can be expected to continue to do so at an increasingly rapid rate. As a consequence, multiple options exist today for providing telecommunications services to the public, including service to Indian reservations and other similarly-situated areas. The number of these options will increase over the next few years, and their capabilities will expand as well. With this technological innovation comes increasing expectations of what telecommunications services can provide, and greater reliance on having those services available.

My fellow panelists today represent a variety of alternatives for bringing telecommunications and related services to the unserved: wireline, terrestrial wireless, and satellite. These witnesses undoubtedly will go into some detail about the capabilities of their technologies and services, and their viewpoints on the feasibility of expanding the availability of service to currently unserved and under-served areas are very valuable.

Wireline. The option everyone thinks of first, of course, is the traditional one of "POTS" - running physical wire from a switch to each location to provide "Plain Old Telephone Service". With today's technological diversity, however, this "running physical wire" actually presents an array of choices. For example, the "wire" could be the

traditional twisted pair, or it could be coaxial cable, or it could be fiber optic cable. Similarly, the "wire" could be used to provide just voice service, or it could be used to provide digital internet access at various speeds, delivery of video programming, and almost anything else one can think of, provided that the wire and its associated electronics provide sufficient capacity. Even the twisted pair can support high speed internet connections if it is properly conditioned and digital subscriber line (DSL) capabilities are available.

Furthermore, the wire could be installed and controlled by the traditional telephone company; or it could be run by a cable operator; or it might be provided by a new competitive entrant in either or both of these traditional services. Thus, where it is economically and geographically feasible to run physical wire, the capacity of the wire can vary substantially; and the provider can be a traditional provider or a new entrant. These considerations may be useful to keep in mind when addressing incentives and evaluating costs and services because it is not intuitively apparent that limiting your inquiry to the provision of basic voice service would produce the least costly alternative. When all relevant factors are considered, this may be the case. But a close analytical look might reveal situations in which basic voice service could be provided at lower cost if it were provided in conjunction with higher capacity services that share the same infrastructure.

The Commission therefore may wish to consider sufficient flexibility within any incentives it adopts so as to permit shared infrastructure. In this manner, demand for higher capacity services might be met as well as that for the more traditional phone service. Experience suggests that demand often is related to availability and affordability.

Terrestrial Wireless. Wireless, rather than wireline, could prove more economical for consumers in some unserved areas. Over the past four years an unprecedented number of spectrum licenses have been issued to service providers. The spectrum available for providing telecommunication services includes cellular and enhanced specialized mobile radio (ESMR) at 800 megahertz (MHZ); personal communications service (PCS) at 2 gigahertz (GHz); digital multiple distribution service (MDS) at 2.5 GHz; microwave point-to-point and point-to-multipoint services at 24 and 38 GHz; and local multiple distribution service (LMDS) at 28/31 GHz. In addition, there is Part 15 unlicensed spectrum that might be used for shorter links at 900 MHZ, 2.4 GHz, 5 GHz, and 5.8 GHz. Using this unprotected spectrum might be useful particularly in rural areas, where interference from other signals tends to be minimal to non-existent.

Reliable service at these frequencies generally is limited to line-of-sight, so the topographical features of a specific geographic area will play a large role in determining the utility of these frequencies. But all of these frequencies and services have the potential to connect homes to central switches; and all can be configured to provide various amounts of capacity (or "bandwidth"). Furthermore, under the Commission's rules for

geographic area partitioning and spectrum disaggregation, a licensee not intending to use all of its spectrum capacity is permitted to separate the unused spectrum and transfer it to another entity. While it appears to date that few have done so, these are options that a local cooperative or community might explore with the holders of spectrum rights in their area if the license holders do not intend to provide service. The multiple bands that could be used to provide telecommunications services provide multiple opportunities.

I want to note that there are traditional land mobile two-way services that could be thought of as providing communications capabilities, including the private radio and traditional SMR services. I have not discussed these services here because generally they do not connect to the public switched telephone network and therefore would not be considered to provide service functionally equivalent to consumer grade telecommunications services.

Satellite. Just this past November, Iridium became the first regular operational mobile satellite system for consumer services. Its North America gateway, in fact, is just up the street in Tempe and much of its electronics was designed and built right here in Chandler. It initiated service on an unprecedented worldwide basis with telephones and pagers that allow access virtually anywhere on earth. Others, such as Globalstar, are working to bring similar competitive services to market very shortly; and broadband satellite systems capable of providing worldwide internet access are planned to be deployed in the next several years.

Last Thursday, in your 2 GHz Mobile Satellite Service proceeding, you solicited comment on the role that mobile satellite systems can play in providing service to rural and unserved areas, including Indian reservations. The record in response to your questions should be informative. While satellite-based two-way services have the potential for serving isolated homes and areas, widespread availability of this service is still novel and the long-term cost of equipment and service is not yet clear. Your recent request for comment on these issues should provide information with which to assess the possibilities and potential.

Evolving Technology and Enhanced Expectations

An article in last week's Time Magazine put today's communications needs in perspective. The article concluded that small towns lacking high-speed Internet access increasingly are finding it difficult to attract new jobs.[2] Among the factors warranting attention when you consider options to promote provision of service to unserved or under-served areas will be the definition of "service" for the Commission's purposes and the public's needs. The disparity between services generally available on Indian reservations (and within some other rural areas) and those available in more populous areas of our country can be startling to those of us who live and work in urban areas.

The discussion at your first hearing, and again here today, addresses in some detail the lack even of multi-party shared voice telephone lines for some homes and geographic areas. Certainly by any standard "plain old telephone service' ("POTS") is a laudable

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2/ Time, vol. 153, no. 11 at p. 86 (March 22, 1999).

goal. But by the increasingly demanding standards of today's information age, one may think it essential that telephone service be capable of carrying computer modem communications at reasonable speeds as well as voice. Perhaps your goal will be to bring to unserved and under-served areas the full panoply of modern communications services.

The government cannot, and should not, pay for or subsidize over-engineered gold-plated systems; but it should do what it can to encourage the private competitive provision of the most cost-effective and feature-rich service. In order to accomplish this goal, care must be taken that incentives for providing telephone service to unserved areas promote, and not unintentionally disadvantage, the provision of newer, broadband services. Allowance should be made to permit and even encourage rollout of newer or non-standard technologies that can support an array of services, so long as the government's obligations are not thereby increased. The technical ability to leapfrog older systems in a cost-effective manner may not always exist, but the potential to do so should be considered carefully.

I understand that the availability even of shared lines would be an improvement for those who today lack access to the voice network. And cost perhaps is the most important factor. But technology increasingly is making available new and better services at steadily decreasing cost. One cannot assume, for example, that there is a substantial cost difference between running twisted pairs in rural areas and running digital fiber optical cable, or installing radio-based equipment. Consequently, as a goal and as a general

principle, it would be beneficial to be open and sensitive to opportunities to "leapfrog" older generations of equipment and service unless there exists a significant difference in cost.

Second, any Commission incentives or other action should be technologically neutral. In today's fast-paced environment the number of technological choices for meeting communications requirements are increasing. So are expectations. To the extent feasible, therefore, the ***means*** of delivering service – whether wireline, terrestrial wireless, satellite, or some other – should not be an issue.

Finally, with regard to wireless uses, sound spectrum policies and wise allocations foster widespread availability of affordable telecommunications services. Technological innovation is not suddenly going to cease; rather, it is a constant, on-going process. Accordingly, there is a continuing need to respond appropriately to changing situations to ensure that ever-evolving needs and services are accommodated.

In this context, spectrum reallocations to accommodate use of more advanced technologies are necessary if there is no natural progression from one technology or use to another. This was true for PCS in the early 1990's, and recent studies related to Third Generation PCS services evidence a consensus that over the next decade several hundred additional megahertz will be needed to satisfy demand if a full array of wireless broadband services is to be made available to American consumers. But unlike the situation in many countries, the spectrum in the ranges useful for Third Generation

applications already is occupied by many different licensees for services that have no natural progression to broadband PCS. The Commission's decisions related to Third Generation services over the next decade will determine whether broadband wireless services are generally available at affordable rates to all consumers, including those traditionally unserved or under-served populations on Indian reservations and other rural areas.

Conclusion

The continuing explosion of technological advances has produced an unprecedented array of options for providing telecommunications services -- so much so that it now is feasible to think in terms of having telecommunications service available at reasonable cost to all who desire it. The Commission's goal should be to foster provision of the fullest menu of modern telecommunications services to all, especially to those who so long have been unserved.

The dynamic nature of technology and the public's increased expectations and reliance on telecommunications necessarily make more important than ever the Commission's responsible discharge of its duty to regulate "so as to make available, so far as possible, to all the people of the United States . . . a rapid, efficient, Nation-wide, and world-wide wire and radio communications service with adequate facilities at reasonable charges. . . ."